WHAT IS CLAIMED IS:

1. A half mirror reflector comprising:

a support plate attached to a support rod;

a half mirror fixed to the support plate;

an LED road sign mounted on the support plate under the half mirror and having a plurality of LEDs;

a PCB substrate mounted on the support plate under the half mirror to control the operation of the LED road sign; and

a solar battery module provided at the upper part of the support rod to generate a voltage for operating the LED road sign and supply the voltage to the PCB substrate.

2. The half mirror reflector according to claim 1, further comprising a storage battery mounted on the support plate under the half mirror to store a voltage supplied from the solar battery module and transfer the stored voltage to the PCB substrate.

3. The half mirror reflector according to claim 1, wherein said half mirror has a convex circular or quadrangular shape.

4. The half mirror reflector according to claim 1, wherein said half mirror is coated with a transparent coating

on both sides thereof after having an aluminum thin film formed on one side thereof.

5. The half mirror reflector according to claim 4, wherein said half mirror contains a UV protector.

6. The half mirror reflector according to any of claim 1 wherein said half mirror is formed from any one of polycarbonate (PC) and acryl.

7. The half mirror reflector according to claim 1, further comprising:

a support bracket fixed to the rear of the support plate;

a first bracket fixed to the support bracket; and

a second bracket having one end fixed to the first bracket and the other end fixed to the support rod.

8. The half mirror reflector according to claim 1, further comprising a third bracket for fixing the solar battery module to the upper part of the support rod.

9. The half mirror reflector according to claim 1, wherein said PCB substrate includes:

a first diode for rectifying a direct current generated from the solar battery module and outputting the rectified

direct current to a first node;

a storage battery for storing a voltage of the first node;

a photosensor coupled between the first node and a ground voltage to sense ambient light;

a switch box for receiving power from the first node, generating a control signal for operating LEDs in the LED road sign using the photosensor or a switch and outputting the control signal to a third node;

a first transistor for switching the voltage of the first node by a voltage of the third node;

a current transformer for converting a first current supplied from the first node through first and second inductors by the switched voltage from the first transistor and generating a second current to be outputted to a third inductor;

a second transistor for switching a current to flow through the first and second inductors by the switched voltage from the first transistor; and

a second diode for rectifying a current outputted from the current transformer and supplying the rectified current to a plurality of LEDs in the LED road sign.

10. The half mirror reflector according to claim 9, wherein said PCB substrate further includes:

a first resistor coupled between the photosensor and a

ground voltage;

a second resistor coupled between an output terminal of the switch box and the third node;

a third resistor coupled between the third node and a ground voltage;

a fourth resistor coupled between one end terminal of the first transistor and a ground voltage; and

a fifth resistor coupled between one end terminal of the first transistor and one end terminal of the second inductor.

11. The half mirror reflector according to claim 9, wherein said first transistor is a PNP bipolar transistor and said second transistor is an NPN bipolar transistor.

12. The half mirror reflector according to claim 1, wherein said PCB substrate includes:

a bridge diode for converting an AC power into a DC power and outputting the DC power;

a plurality of LEDs and a FET switching element connected in series between an output terminal of the bridge diode and a ground voltage;

a switching pulse generating IC for receiving the DC power outputted from the bridge diode and generating a switching pulse signal; and

an eleventh transistor for driving the FET switching

element according to the switching pulse signal.

13. The half mirror reflector according to claim 12, wherein said PCB substrate further includes:

a protective resistor coupled between an output terminal of the bridge diode and an input terminal of the switching pulse generating IC; and

a zener diode for maintaining a constant DC voltage to be inputted to the switching pulse generating IC.

14. The half mirror reflector according to claim 12, wherein said switching pulse generating IC includes:

a frequency generator for generating a frequency according to an RC time constant; and

a pulse width controller for controlling a pulse width of a switching pulse.

15. The half mirror reflector according to claim 12, wherein said eleventh transistor is an NPN bipolar transistor.